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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/829,624
Filing Date: April 22, 2004
Appellant(s): BARSNESS ET AL.

Gero McClellan
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/24/2008 appealing from the Office action mailed 09/18/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|--------------|---------|--------|
| 2003/0217033 | SANDLER | 5-2002 |
| 2004/0073565 | KAUFMAN | 4-2003 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandler et al. (Sandler hereinafter) (US Patent No. 2003/0217033 A1, filed: May 17, 2002) in view of Kaufman et al. (Kaufman hereinafter) (US 2004/0073565 A1).

Regarding Claims 1, and 22, Sandler discloses computer readable storage medium containing a program which, when executed, performs a process for identifying correlated columns from database tables, the process comprising:

determining correlation attributes for a first column and a second column from one or more database tables, the correlation attributes describing for each column at least one of the column and content of the column (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12; wherein the step of mapping which includes all of the values in field K1 1804 that have the same values in field F1 1806 corresponds to the step of determining the correlation attributes as claimed; wherein values F1 corresponds to the first column claimed; and wherein values in K1 corresponds to the second column claimed; Sandler);

comparing the correlation attributes from the first and second column (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler);

identifying similarities between the first and second column on the basis of the comparison (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 8 – 15, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler¹);

on the basis of the identified similarities, determining whether the first and second column are correlated (Fig. 18A, Page 17, [0235], lines 8 – 15, “To perform this mapping, all of the values in field K1 1804 **that have the same values** in field F1 1806 must be combined...”; wherein “the same values” corresponds to the identified similarities claimed; Sandler); and

upon determining the first and second columns are correlated, merging the first and second columns to create a third column (Fig. 18A, Page 17, [0235], lines 8 – 15, “To perform this mapping, all of the values in field K1 1804 **that have the same values** in field F1 1806 must be combined...”; wherein “the same values” corresponds to the identified similarities claimed; Sandler).

However, Sandler does not explicitly disclose that the third column contains each data value stored in the first and second columns. On the other hand, Kaufman discloses merging the first and second columns to create a third column that contains each data value stored in the first and second column (Fig. 5B, wherein the column “SECURITY_GROUP_USER” corresponds to the first column claimed, the column “PEOPLE” corresponds to the second column claimed, and wherein the “USER” column corresponds to the third column claimed, also note that “USERS” column contains each

¹ Wherein the step of mapping all the values in **field K1 1804 that have the same values in field F1 1806** corresponds to the step of identifying the similarities between the first and second column as claimed.

data value stored in the first and second column, such as, "USERS_KEY" and "PEOPLE_KEY"; Page 8 – 9, [0134] – [0135], and [0139], Kaufman).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Kaufman's teachings to the system of Sandler. Skilled artisan would have been motivated to do so, as suggested by Kaufman (Page 1, [0011], Kaufman), to provide a comprehensive application through which the back-end can be operated, and through which all conventional database activities-searching, listing, adding, editing0can be supported, across all base-tables comprising the schema.

Furthermore, the combination of Sandler in view of Kaufman discloses:

storing the third column in the database (Page 17, [0235], lines 12 – 15, Sandler; and Page 8, [0136], Kaufman).

Regarding Claims 2, and 23, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein identifying the similarities comprises:

determining a correlation value indicating a degree of correlation between the first and the second column (Page 2, [0018], lines 6 – 9, Sandler); and

determining whether the correlation value exceeds a predetermined threshold (Page 2, [0018], lines 6 – 9; is above a predetermined threshold; Sandler).

Regarding Claims 3, and 24, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

if it is determined that the first and second column are correlated (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, Sandler), displaying an indication to a user that the first and second column can be merged (Page 1, and 2, [0008], and [0015], lines 1 – 5, and 4 – 7; respectively, Sandler); and

in response to user input, merging the first and second column into a single column (Page 10, [0132], lines 2 – 8, Sandler).

Regarding Claims 4, and 25, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the first column is a column of a first database table and the second column is a column of a second database table, the process further comprising:

determining correlation attributes for N columns from the first database table and M columns from the second database table, where N and M are integers (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, Sandler);

comparing the correlation attributes from each of the N columns with the correlation attributes from each of the M columns to identify similarities between the N and M columns (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler); and

on the basis of the identified similarities, determining whether one or more of the N and M columns are correlated (Fig. 18A, Page 17, [0235], lines 12 – 15, Sandler).

Regarding Claims 5, and 26, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

merging each of the one or more of the N and M columns determined to be correlated (Fig. 18A, items 1806, 1804, 1802, and 1810, Page 17, [0235], lines 7 – 15; all of the values in field K1 1804 that have the same values in field F1 1806 must be combined to **provide a value for field F 1810 in table TARGET 1802**, Sandler).

Regarding Claims 6, and 27, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

determining, from the one or more database tables, metadata describing characteristics of each column (Page 4, [0056], lines 3 – 10, Sandler); and

wherein the correlation attributes are determined on the basis of the determined metadata (Page 18, [0251], lines 3 – 10, Sandler).

Regarding Claims 7, and 28, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the determined metadata describes for each column an attribute of a data value in the column (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 8 – 15, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler).

Regarding Claims 8, and 29, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the determined metadata describes for each column at least one of:

- (i) a label;
- (ii) a comment;
- (iii) a constraint;
- (iv) a trigger;
- (v) a name (Page 9, [0116], lines 1 – 3, Sandler);
- (vi) a data type (Page 4, [0057], lines 10 – 12; data type, Sandler); and
- (vii) a column length (Page 4, [0057], lines 10 – 12; length of the columns, Sandler).

Regarding Claims 9, and 30, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

determining, from the one or more database tables, statistical parameters associated with each of the columns (Page 4, [0059], lines 1 – 5, Sandler); and

wherein the correlation attributes are determined on the basis of the determined statistical parameters (Page 4, [0059], lines 5 – 9, Sandler).

Regarding Claims 10, and 31, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the determined statistical parameters describe for each column at least one of:

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- (i) a minimum value (Page 4, [0059], lines 1 – 5; minimum; Sandler);
- (ii) a maximum value (Page 4, [0059], lines 1 – 5; maximum; Sandler);
- (iii) an average value; and
- (iv) a range of values (Page 4, [0059], lines 1 – 5; ... maintains a range indices for each key field column ... ; Sandler).

Regarding Claims 11, and 32, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

determining, from the one or more database tables, ontological properties describing cognitive qualities associated with each column (Page 8, [0110], lines 3 – 9, Sandler); and

wherein the correlation attributes are determined on the basis of the determined ontological properties (Page 8, [0110], lines 3 – 9, Sandler).

Regarding Claims 12, and 33, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the determined ontological properties describe for each column at least one of:

- (i) a synonym (Page 8, [0110], lines 3 – 9; synonym table, Sandler);
- (ii) a parent node (Page 6, [0073], lines 9 – 14; Sandler); and
- (iii) an ancestor node (Page 6, [0073], lines 9 – 14; Sandler).

Regarding Claims 13, and 34, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

determining, from the one or more database tables, metadata describing the ontological properties (Page 8, [0110], lines 3 – 9, Sandler).

Regarding Claims 14, and 35, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

determining, from the one or more database tables, measurement units associated with each column (Page 4, [0059], lines 1 – 5, Sandler); and

wherein the correlation attributes are determined on the basis of the determined measurement units (Page 4, [0059], lines 5 – 9, Sandler).

Regarding Claims 15, and 36, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

determining, from the one or more database tables, metadata describing the measurement units (Page 4, [0059], lines 1 – 5, Sandler).

Regarding Claims 16, and 37, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein identifying the similarities comprises:

determining whether the first and second column are associated with similar measurement units (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler).

Regarding Claims 17, and 38, the combination of Sandler in view of Kaufman discloses a computer readable storage medium containing a program which, when executed, performs a process for identifying correlated columns from database tables, the process comprising:

- determining metadata for at least two columns from one or more database tables, the metadata describing characteristics of each column (Page 4, [0056], lines 3 – 10, Sandler);

- analyzing content from the at least two columns from the one or more database tables (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler); and

- determining a degree of correlation between the at least two columns using the determined metadata and the analyzed content (Page 17 and 18, [0235] and [0251], lines 8 – 15 and 3 – 10; respectively, wherein the step of mapping by combining the same values in fields corresponds to the step of determining the degree of correlation as claimed; wherein the “many-to-one” corresponds to the metadata claimed; wherein the values in the fields corresponds to the analyzed content claimed; and wherein the mapping after combining the values, for example: value of the field F 1802, corresponds to the degree of correlation claimed; Sandler); and

- storing the value representing the degree of correlation in the database (Page 17, [0235], lines 12 – 15, the value of the field F 1810 will be the sum of all of the

elements in the field K1 1804 in table T1 1800 that have "A" as the value of field F1 1806).

Regarding Claims 18, and 39, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein determining the degree of correlation comprises:

assigning a first correlation value to the determined metadata (Page 9, [0122], line 1; one column is chosen as a field of values sources; Sandler);

assigning a second correlation value to the analyzed content, wherein the first and second correlation values are different (Page 9, [0123], and [0124], lines 1 – 6, and 1 – 2; respectively; Sandler); and

calculating a total correlation value on the basis of the first and second correlation values (Page 9, [0125], lines 1 – 4; ... distinct values in the column gets added to the result of (3); Sandler).

Regarding Claims 19, and 40, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

merging the at least two columns if the total correlation value exceeds a predetermined threshold value (Page 2, [0018], lines 6 – 9; is above a predetermined threshold; Sandler).

Regarding Claims 20, and 41, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein analyzing the content comprises:

determining statistical parameters from the content of each column (Page 4, [0059], lines 1 – 5, Sandler).

Regarding Claims 21, and 42, the combination of Sandler in view of Kaufman discloses a computer readable medium, wherein the process further comprises:

merging the first and the at least one second column if it is determined that the first and at least one second column are correlated (Fig. 18A, items 1806, 1804, 1802, and 1810, Page 17, [0235], lines 7 – 15; all of the values in field K1 1804 that have the same values in field F1 1806 must be **combined to provide a value for field F 1810 in table TARGET 1802**, Sandler).

Regarding Claim 43, the combination of Sandler in view of Kaufman discloses a data processing system, comprising a processor:

at least one database having one or more database tables (Page 2, [0016], lines 1 – 4, Sandler); and

a correlation manager for identifying correlated columns from the one or more database tables (Page 6, [0082], lines 3 – 6, Sandler), the correlation manager which, when executed by the processor, is configured for:

determining correlation attributes for a first column and a second column
from the one or more database tables, the correlation attributes describing for

each column at least one of the column and content of the column (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12; wherein the step of mapping which includes all of the values in field K1 1804 that have the same values in field F1 1806 corresponds to the step of determining the correlation attributes as claimed; wherein values F1 corresponds to the first column claimed; and wherein values in K1 corresponds to the second column claimed; Sandler);

comparing the correlation attributes from the first and second column (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler);

identifying similarities between the first and second column on the basis of the comparison (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 8 – 15, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler²);

on the basis of the identified similarities, determining whether the first and second column are correlated (Fig. 18A, Page 17, [0235], lines 12 – 15, “To perform this mapping, all of the values in field K1 1804 **that have the same values** in field F1 1806 must be combined...”; wherein “the same values” corresponds to the identified similarities claimed; Sandler);

upon determining the first and second columns are correlated, merging the first and second columns to create a third column (Fig. 18A, Page 17, [0235], lines 8 – 15, “To perform this mapping, all of the values in field K1 1804 **that**

have the same values in field F1 1806 must be combined...”; wherein “the same values” corresponds to the identified similarities claimed; Sandler) that contains each data value stored in the first and second column (Fig. 5B, wherein the column “SECURITY_GROUP_USER” corresponds to the first column claimed, the column “PEOPLE” corresponds to the second column claimed, and wherein the “USER” column corresponds to the third column claimed, also note that “USERS” column contains each data value stored in the first and second column, such as, “USERS_KEY” and “PEOPLE_KEY”; Page 8 – 9, [0134] – [0135], and [0139], Kaufman); and

storing the third column in the database (Page 17, [0235], lines 12 – 15, Sandler; and Page 8, [0136], Kaufman).

Regarding Claim 44, the combination of Sandler in view of Kaufman discloses a data processing system comprising a processor;

at least one database having one or more database tables (Page 2, [0016], lines 1 – 4, Sandler); and

a correlation manager for identifying correlated columns from the one or more database tables (Page 6, [0082], lines 3 – 6, Sandler), the correlation manager which, when executed by the processor, is configured for:

² Wherein the step of mapping all the values in **field K1 1804 that have the same values in field F1 1806** corresponds to the step of identifying the similarities between the first and second column as claimed.

determining metadata for at least two columns from the one or more database tables, the metadata describing characteristics of each column (Page 4, [0056], lines 3 – 10, Sandler);

analyzing content from the at least two columns from the one or more database tables (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 – 12, all of the values in field K1 1804 that have the same values in field F1 1806, Sandler); and

determining a degree of correlation between the at least two columns using the determined metadata and the analyzed content (Page 17 and 18, [0235] and [0251], lines 8 – 15 and 3 – 10; respectively, wherein the step of mapping by combining the same values in fields corresponds to the step of determining the degree of correlation as claimed; wherein the “many-to-one” corresponds to the metadata claimed; wherein the values in the fields corresponds to the analyzed content claimed; and wherein the mapping after combining the values, for example: value of the field F 1802, corresponds to the degree of correlation claimed; Sandler); and

storing the value representing the degree of correlation in the database (Page 17, [0235], lines 12 – 15, the value of the field F 1810 will be the sum of all of the elements in the field K1 1804 in table T1 1800 that have “A” as the value of field F1 1806).

(10) Response to Argument

Rejection of claims 1-44 under 35 U.S.C. § 103(a) as being unpatentable over Sandler et al., U.S. Patent Application Publication No. 2003/0217033 A1 (hereinafter Sandler) in view of Kaufman et al., U.S. Patent Application Publication No. 2004/0073565 A1 (hereinafter Kaufman).

Regarding claims 1, 22, and 43:

In response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant argues that; "Sandler does not disclose a 'method for identifying correlated columns from database tables' that includes 'determining correlation attributes for a first column and a second column from one or more database tables, the correlation attributes describing for each column at least one of the column and content of the column' ."

Examiner respectfully disagrees. The combination of Sandler in view or Kaufman does disclose: determining correlation attributes for a first column and a

second column from one or more database tables (See, Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 - 12; "... To perform this mapping, **all of the values in field K1 1804 that have the same values in field F1 1806 must be combined to provide a value for field F 1810** in table TARGET 1802. In this example, a SUM operation is used to combine the values from field K1 1804..."; wherein the step of mapping which includes all of the values in field K1 1804 that have the same values in field F1 1806 corresponds to the step of determining the correlation attributes as claimed; wherein values F1 corresponds to the first column claimed; and wherein values in K1 corresponds to the second column claimed; Sandler). Also, Examiner interprets that since the prior art teaches values of first column that have the same values in second column then a "correlation" of such columns is determined.

Appellant argues that; "nothing in this material discloses the claimed steps of 'identifying similarities between the first and second column on the basis of the comparison,' and 'on the basis of the identified similarities, determining whether the first and second column are correlated.'"

Examiner respectfully disagrees. The combination of Sandler in view or Kaufman does disclose: identifying similarities between the first and second column on the basis of the comparison (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 8 – 15, "To perform this mapping, **all of the values in field K1 1804 that have the same values in field F1 1806 must be combined to provide a value for field F 1810** in table TARGET 1802. In this example, a SUM operation is used to combine the values

from field K1 1804”, Wherein the step of mapping all the values in **field K1 1804 that have the same values in field F1 1806** corresponds to the step of identifying the similarities between the first and second column as claimed; Sandler); on the basis of the identified similarities, determining whether the first and second column are correlated (Fig. 18A, Page 17, [0235], lines 8 – 15, “To perform this mapping, all of the values in field K1 1804 **that have the same values** in field F1 1806 must be combined...”; wherein “the same values” corresponds to the identified similarities claimed; Page 17, [0236], lines 5 – 14, “ These entries have values that indicates which rows of table TARGET 1802 contain the result of aggregating the corresponding rows of table T1 1800. In this example, reverse index 1812 contains [0 0 1 2 1], indicating that rows 0 and 1 of table T1 1800 will be aggregated into row 0 of table TARGET 1802”; Sandler).

Appellant further argues that the applied art fails to disclose; “upon determining the first and second columns are correlated, merging the first and second columns to create a third column that contains each data value stored in the first and second columns.”

Examiner respectfully disagrees. The combination of Sandler in view or Kaufman does disclose: upon determining the first and second columns are correlated, merging the first and second columns to create a third column that contains each data value stored in the first and second column (Fig. 18A, Page 17, [0235], lines 8 – 15, “To perform this mapping, all of the values in field K1 1804 **that have the same**

values in field F1 1806 must be combined..."; wherein "the same values" corresponds to the identified similarities claimed; also see Page 14, [0212], "two tables (in this case, T1 (1500) and T2 (1502), which are **mapped one-to-one** on a key field in each table (in this case, key field K1 (1510) in T1 (1500) and key field K2 (1512) in T2 (1502)), and **creates a single** table whose fields are the union of the fields of the two tables (in this case, combined table TC (1504)", Sandler; and Fig. 5B, wherein the column "SECURITY_GROUP_USER" corresponds to the first column claimed, the column "PEOPLE" corresponds to the second column claimed, and wherein the "USER" column corresponds to the third column claimed, also note that "USERS" column contains each data value stored in the first and second column, such as, "USERS_KEY" and "PEOPLE_KEY"; Page 8 – 9, [0134] – [0135], and [0139], "[0136] The USERS table incorporates (among others) a Login_ID field, which is **correlated** against the system-user's operating-environment credentials. (In the reference implementation, this is the UID which has been authenticated and forwarded by the web server; alternatively, it could be the user's OS login.) When the system establishes a new user-session (upon the user's initial contact), it attempts this **correlation** to a valid USERS.Login_ID. If no correlation can be made", Kaufman). As stated in the Final Office Action dated 09/10/2007, both of the references Sandler and Kaufman disclose the step of merging as claimed. Examiner also notes that even though the Kaufman reference was presented for the purpose of: the third column contains each data value stored in the first and second columns, the Kaufman reference also discloses correlation of the first and second column (See Fig 5C, Page 9, [0140],

"SECURITY_GROUP_TABLE supports **many-to-many relationships** between SECURITY_GROUPS and SECURITY_TABLEs (and is a 'detail' table to both). Additionally, however, the SECURITY_GROUP_TABLE incorporates Boolean (true/false) columns which indicate permission for the related SECURITY_GROUP to (respectively) browse, add to, edit, or delete from the corresponding SECURITY_TABLE", wherein the many-to-many relationships corresponds to the correlation, Kaufman).

Regarding claims 2 and 23:

Appellant further argues that the applied art fails to disclose; "determining a correlation value indicating a degree of correlation between the first and the second column and determining whether the correlation value exceeds a predetermined threshold".

Examiner respectfully disagrees. The combination of Sandler in view or Kaufman does disclose: determining a correlation value indicating a degree of correlation between the first and the second column (Page 14, [0212], "a single table whose fields are the union of the fields of the two tables (in this case, combined table TC (1504)). As mentioned, the combined table TC can be virtual, and exist only in the form of the indices T1 INDEX 1506 and T2 INDEX 1508. These indices that represent the combined tables **indicate which rows from the source tables map** to the rows of the combined table. For example, **T1 INDEX (1506) contains [0 1 2 - -]**. This indicates that row 0 (counting from 0) of the combined table TC (1504) contains values from the

fields of row 0 of T1 (1500)", wherein the index correspond the correlation value as claimed; Sandler) and determining whether the correlation value exceeds a predetermined threshold (Page 4, [0059], "system maintains **range indices for each key field column and index column** stored in the database. For each fixed-size 'chunk' of a column (or index), **the range indices contain maximum and minimum values** of the data in that chunk. ... or identifying minimum or maximum values", [0060], "the desired value can first be compared to the minimum and maximum values for each chunk, and chunks for which the desired value does not fall within the range defined by the minimum and maximum values ", wherein the minimum and maximum values corresponds to the predetermined threshold as claimed; and Page 2, [0018]; respectively, Sandler).

Regarding claims 9, 11, 14, 30, 34, and 35:

Appellant further argues that; "nothing in this generic description of an index discloses the claimed step of determining correlation attributes between two columns using statistical information"; that; "nothing in this description of a database index discloses anything whatsoever to do with 'measurement units'"; and further that; "the passage cited by the Examiner appears to have nothing whatsoever to do with 'determining, from the one or more database tables, ontological properties describing cognitive qualities associated with each column'."

Examiner respectfully disagrees. First, in response to appellant's argument that the references fail to show certain features of appellant's invention, it is noted that the

features upon which applicant relies (i.e., “using statistical information”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Second, the combination of Sandler in view or Kaufman does disclose: wherein the correlation attributes are determined on the basis of the determined statistical parameter (Claim 9) (Page 4, [0059], “... each fixed-size ‘chunk’ of a column (or index), the range indices contain maximum and minimum values of the data in that chunk. This information can be used to increase the efficiency of certain operations, such as table joins, searches, or identifying minimum or maximum values....,” wherein the maximum range and minimum range imply that there are statistical parameters as claimed, Sandler). Third, the combination of Sandler in view or Kaufman does disclose: wherein the correlation attributes are determined on the basis of the determined measurement units (Page 4, [0059] and [0060], “...a column had 700 million entries, and that the chunk size for the column is 10,000 entries. The column would have a range index with 70,000 entries (which is small compared to the 700 million entries of the column), with each entry storing the minimum and maximum values in that chunk of the column...,” wherein the 700 million entries correspond to the determined measurement units as claimed; Sandler). Finally, the combination of Sandler in view or Kaufman does disclose: determining, from the one or more database tables, ontological properties describing cognitive qualities associated with each column (Page 8, [0110], lines 3 – 9, “...all of the input tables I(G) are combined into a single table S(G) (Step 1000). Next, S(G) is

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exploded into a single table ES(G) (Step 1004). Duplicate fields in ES(G) are discarded to form table UES(G) and **a synonym table Z(G)** is constructed from ES(G) (Step 1008). UES(G) is partitioned into PUES(G) (Step 1012), and G is constructed by applying the computational rules to PUES(G) and Z(G) (Step 1016)...", Sandler). The examiner has made such interpretation since appellant's specification discloses; "By way of example, the determined ontological properties may describe at least one synonym..." (specification of the disclosure; [0061]).

Regarding claims 3-6, 7-8, 10, 12-13, 15-16, 24-27, 28-29, 31-33, and 36-37:

Appellant's arguments directed towards the rejection of claims 3-6, 7-8, 10, 12-13, 15-16, 24-27, 28-29, 31-33, and 36-37 reiterate deficiencies Appellant feels were made in the rejection of the independent claims, and do not address any new points. Therefore, the examiner submits that if the rejection of the independent claims is deemed proper, the rejection of claims 3-6, 7-8, 10, 12-13, 15-16, 24-27, 28-29, 31-33, and 36-37 should also be upheld.

Regarding claims 17, 38, and 44:

Appellant's arguments directed towards the rejection of independent claims 17, 38, and 44 reiterate deficiencies Appellant feels were made in the rejection of the independent claims 1, 22, and 43, and do not address any new points. Therefore, the examiner submits that if the rejection of the independent claims is deemed proper, the rejection of claims 7, 38, and 4 should also be upheld.

Regarding claims 18-21 and 39-42:

Appellant's arguments directed towards the rejection of claims 18-21 and 39-42 reiterate deficiencies Appellant feels were made in the rejection of the independent claims, and do not address any new points. Therefore, the examiner submits that if the rejection of the independent claims is deemed proper, the rejection of claims 18-21 and 39-42 should also be upheld.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Giovanna Colan/

Examiner, Art Unit 2162

Conferees:

/John Breene/

Supervisory Patent Examiner, Art Unit 2162

/Mohammad Ali/

Supervisory Patent Examiner, Art Unit 2169

An appeal conference was held on 28 May 2008, and it was agreed to proceed to the board of appeals.